

### REMARKS

Claims 1-26 are presented for examination. Claims 1-5, 7-12, 14-18, 20, and 24 have been amended to define more clearly what Applicant regards as his invention. It should be noted that the changes made do not narrow the scope of any claim recitation. Claims 1, 4, 8, and 11 are in independent form. Favorable reconsideration is requested.

The specification was objected to on formal grounds, and Applicant has amended the specification accordingly. Withdrawal of this objection is respectfully requested.

Claims 4, 5, 11, 12, 17, 18, 23, and 26 were rejected under 35 U.S.C. § 102(b) as being anticipated by Cox et al. (U.S. Patent 5,915,027); and Claims 6, 7, 13, and 14, as being anticipated by Cox et al. in view of Tanaka (Japanese Application No. 2000-82211, laid open as Kokai 2001-275115A)<sup>1/</sup>. Claims 1, 3, 8, 10, 17-19, and 22 were rejected under 35 U.S.C. § 103(a) as being obvious from Cox et al. in view of Moskowitz et al. (U.S. Patent 5,889,868); Claims 2 and 9, as being obvious from Cox et al. in view of Moskowitz et al., and further in view of Sandford, II et al. (U.S. Patent 5,727,092); Claim 15, as being obvious from Cox et al. in view of Moskowitz et al., and further in view of Kunimoto et al. (U.S. Patent 5,303,236); Claim 16, as being obvious from Cox et al. in view of Kunimoto et al.; Claims 20 and 21, as being obvious from Cox et al. in view of Moskowitz et al., and further in view of Mahe (U.S. Patent 6,459,685); and Claims 24 and 25, as being obvious from Cox et al. in view of Mahe.

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<sup>1/</sup>Although Claims 6, 7, 13, and 14 have been rejected under 35 U.S.C. § 102(b), Applicant assumes that Claims 6, 7, 13, and 14 should have been rejected under 35 U.S.C. § 103(a).

Claim 4 is directed to a method for extracting a message from digital data representative of physical quantities, the message including ordered symbols. The method includes the steps of segmenting the data into regions, extracting a length of an inserted message, and extracting the inserted message.

Cox et al., as understood by Applicant, relates to digital watermarking and discusses a watermark insertion and extraction processes. The processes use a predetermined number of symbols in the watermark (i.e., a predetermined size of the watermark) corresponding to predetermined locations in the set of data (e.g., image) to be watermarked (see, e.g., column 6, lines 40-56). Cox et al. discloses no step of extracting a length of the watermark when extracting the watermark, and has no reason to perform such as step, as the length is predetermined and known to the watermark extractor.

The Examiner has cited column 9, lines 37-45, of Cox et al., as allegedly showing a means for extracting a length of the inserted message. Applicant finds himself unable to agree with the Examiner's analysis, as this cited portion of Cox et al. does not relate to the length of the watermark, but to various possible permutations which are defined at column 8, lines 49-53, and column 9, line 23. The use of the word "permutation" and its definition (cyclic rotation) clearly show that this technique is applied to a fixed number of elements. The subject matter of Cox is thus opposite to extracting a length of an inserted message, as recited in Claim 4.

Notably, the goal of using the permutation in Cox is to "improve the response of the watermark extraction stage", as stated at column 8, lines 55-56, precisely to make the watermark extraction more robust vis-a-vis possible clipping in the image

(“clipping” meaning that some of the digital data have reached their maximum possible value and cannot therefore be appropriately watermarked). This issue has no connection to the problem of using an unknown message size as addressed by the present invention (see, for example, the originally filed application at page 2, lines 2-4). Consequently, Cox et al. fails to teach or suggest extracting a length of an inserted message, as recited in Claim 4.

Accordingly, Claim 4 is seen to be clearly allowable over Cox et al.

Independent Claim 11 is a device claim corresponding to method Claim 4, and is believed to be patentable for at least the same reasons as discussed above in connection with Claim 4.

Claim 1 is directed to a method of inserting a message into digital data representative of physical quantities, the message including ordered symbols. The method includes the steps of segmenting the data into regions, and associating at least one region with each symbol to be inserted. For each region into which a symbol in question is to be inserted, the associating step includes the steps of (1) determining a pseudo-random function, from a key which depends on an initial key and on a length of the message, (2) modulating the symbol in question by a previously determined pseudo-random function in order to supply a pseudo-random sequence, and (3) adding the pseudo-random sequence to a region in question.

The Examiner concedes at page 6 of the Office Action that “Cox et al. do not disclose how to generate the pseudo-random sequence for use in modulation”.

However the Examiner asserts that Moskowitz et al. “disclose means for determining a

pseudo-random function for each region from a key which depends on an initial key and on a length of the message (Column 7, lines 29-39).”

Moskowitz et al., as understood by Applicant, relates to optimization methods for the insertion, protection, and detection of digital watermarks in digitized data. Applicant, however, is unable to find in Moskowitz et al. any description of such a way to generate a pseudo-random sequence. The cited portion of Moskowitz et al. (column 7, lines 29-39) merely states that “where a watermark location is determined in a random or pseudo-random operation dependent on the creation of a pseudo-random key, ... an engineer seeking to provide high level of protection of copyrights, ... is concerned with the size of a given key, the size of the watermark message...”. This only means that, when actually implementing a known watermarking scheme with a fixed message length, the choice of the length of the message is made by the designing engineer according to the general rules as set forth in column 7, lines 57-62. These general concerns cannot fairly be considered a description of a way to generate a pseudo-random sequence, let alone the use of the length of the message to determine a pseudo-random function.

For these reasons, Moskowitz et al. does not teach or suggest the determination of a pseudo-random function from a key which depends notably on a length of the message, as recited in Claim 1.

Applicant has found nothing in Cox et al. or Moskowitz et al., whether considered either separately or in any permissible combination (if any), that would teach or suggest determining a pseudo-random function, from a key which depends on an initial key and on a length of a message, as recited in Claim 1.

Accordingly, Claim 1 is seen to be clearly allowable over Cox et al. and Moskowitz et al., whether considered either separately or in any permissible combination (if any).

Independent Claim 8 is a device claim corresponding to method Claim 1, and is believed to be patentable for at least the same reasons as discussed above in connection with Claim 1.

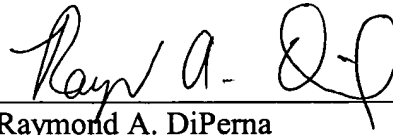
A review of the other art of record has failed to reveal anything which, in Applicant's opinion, would remedy the deficiencies of the art discussed above, as references against the independent claims herein. Those claims are therefore believed patentable over the art of record.

The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicants respectfully requests favorable reconsideration and early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "Ray A. DiPerna", is written over a horizontal line.

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